

New York State Department of Agriculture and Markets
cooperating with
USDA Agricultural Marketing Service (AMS)

New York State Farmers Market Wireless EBT (Electronic Benefit Transfer) Project
FSMIP Cooperative Agreement 12-25-G-0283
Final Report

Executive Summary

40 New York State farmers marketing directly to consumers at New York City farmers markets collectively processed \$65,909.91 in wireless EBT and credit/debit card transactions from June, 2001 to December, 2002 using lightweight, hand-held Linkpoint 9100 wireless point-of-sale terminals issued to each farmer. The project demonstrated that the Linkpoint 9100 wireless terminal operates effectively for both EBT and credit/debit sales in open-air farmers markets with wireless data network access, benefiting both farmers and consumers.

Report

Under FSMIP Cooperative Agreement 12-25-G-0283 (awarded September 15, 1999 and extended to December 31, 2002) the New York State Department of Agriculture and Markets administered a Farmers Market Wireless EBT (Electronic Benefits Transfer) Project during 2000, 2001, and 2002. The objective of the project was “To create a system which allows recipients to use part of their food stamp allowance to shop at local farmers markets under an Electronic Benefits Transfer (EBT) system.”

By Congressional mandate (1992), the Food Stamp Program (FSP) began a state-by-state conversion from paper currency (Food Stamps) to an EBT system, in which a FSP participant uses a state-issued Food Stamp/EBT debit card, swiped through an EBT card terminal at the point-of-sale, to transfer the value of a food purchase from his or her Food Stamp account to the retail food store. As a consequence of this conversion, open-air farmers markets in New York and other states that lacked electricity and telephone lines were no longer able to participate in the FSP, unless they were willing to accept the risk of making FSP transactions using “manual vouchers” without the on-line verification of FSP funds availability through EBT.

The Farmers Market Wireless EBT project was developed to identify, acquire, deploy, and test wireless technology, equipment, and services necessary to restore operation of the Food Stamp Program (FSP) in selected open-air farmers markets where the program had formerly operated for the economic benefit of farmers and the nutritional benefit of participants, but where lack of an “appropriate technology” was a barrier to its operation. In addition, the project incorporated a secondary objective to test the use of the same technology used for wireless EBT transactions in also making credit and debit card transactions at open-air farmers markets that could also benefit farmers and consumers.

2000 Industry-Sponsored Pilot Project

The project was implemented in 2000 at multiple farmers markets in New York City, the first location in New York State to be converted to from Food Stamps to EBT, following a successful joint effort by our Department and the NYS Office of Temporary and Disability Assistance (OTDA) to identify a manufacturer of lightweight, battery-powered, wireless point-of-sale debit card terminals that appeared to meet farmers' need for a fast, convenient method of making Food Stamp/EBT and other card transactions in farmers markets. The Australia-based firm, TillsmithSystems, N.A. (now Linkpoint International), expressed confidence that its wireless terminals would accomplish the task required, and offered to sponsor a pilot phase of the project at its own expense to test its wireless equipment, software, and associated data network services in New York City.

As a result of this offer, our Department and OTDA were able to scrap a proposed plan for a hybrid EBT/paper "farm stamp" project in favor of a "pure-EBT" solution favored by the USDA Food and Nutrition Service (FNS) to accomplish the goal of the FSMIP Cooperative Agreement, and also defer making project expenditures for the lease of wireless equipment until the industry-sponsored test phase was concluded.

In addition to Department and NYS OTDA, the organizations participating in the year 2000 industry-sponsored project included TillsmithSystems N.A., U.S. Wireless Data, Inc., Concord/Bypass Inc., Card Payment Systems, Inc., Citibank EBT Services, Lockheed Martin INS, and the Farmers Market Federation of New York. The Federation's role under the FSMIP proposal -- to procure under contract to the Department wireless terminals, point-of sale signage, and educational outreach materials and to reimburse EBT service fees charged to farmers -- was limited in the industry-sponsored pilot to facilitating farmer training and producing EBT point-of-sale signage.

The approach adopted for the project was issuance of a hand-held wireless Tillsmith K-78 terminal to each of the approximately 45 farmers participating at New York City farmers markets who were already authorized by USDA FNS to make FSP transactions, assuming they agreed to participate. As with the allocation of EBT-dedicated terminals by NYS OTDA to conventional food stores, this approach permitted terminals to be programmed with the bank account information of each farmer to ensure that EBT and any other card transactions (and fees) were routed to their individual bank accounts.

In designing the pilot project, it was also decided that while enabling EBT transactions was the primary focus, it would be appropriate for farmers to be offered the option to also accept credit and debit cards, as such card transactions could benefit both farmers and consumers, allow more opportunities to test the wireless technology, and encourage farmers to purchase their own terminals and thereby reduce government expenditures for "EBT-only" terminals (this has occurred with most larger retail food stores).

The cell-phone like Tillsmith K-78 terminal used for the pilot could be held in one hand, and incorporated a magnetic card swipe slot, numeric keypad, small LED screen, rechargeable battery, internal modem, aerial, and micro-printer for sales receipts. On-line transactions would be made by swiping an EBT or other bank card through the terminal, keying in the sale type (EBT, etc.), the dollar amount of the sale, and the EBT PIN number (entered by customer for EBT or debit cards), and then pressing the “go” key. This action would send an encrypted data signal to a nearby wireless data tower, forwarded via landline to the wireless data service and then the funds processor, which would route it (depending upon card type) to the appropriate customer account (EBT bank account, MasterCard/Visa account, or ATM/debit account). A return signal denoting transaction approval or denial would be sent back by landline to the originating tower, then by wireless transmission to the terminal. The entire transaction process was expected to take 10-15 seconds. At the end of the day a batch closeout message would be sent by the farmer and the day’s sales credited to his or her bank account within 48 hours.

Informational and training meetings conducted in New York City by the cooperating organizations resulted in applications to participate from 36 FNS-authorized farmers. The meetings clarified the purpose of the project as a test of an experimental system requiring cooperation, patience, ideas, and feedback from participating farmers. The option of EBT only or EBT+ credit/debit was offered to all farmers. All costs for the wireless equipment, services, and EBT card transactions were covered by Tillsmith during the 2000 pilot. Farmers who opted to add credit/debit card capability to the terminal agreed on their application to pay transaction fees of approximately \$.30 + 1.65% of the sale amount, or a \$15.00 monthly minimum fee for this additional service.

Field testing of the Tillsmith wireless terminals with two farmers was initiated at the Union Square (Manhattan) and Borough Hall (Brooklyn) Greenmarkets beginning in June, 2000. The wireless terminals and EBT software were certified as meeting EBT operational standards by USDA FNS (Northeast Region) in August, 2000, after which roll-out to participating farmers was initiated at multiple markets by Tillsmith NYC based staff, with assistance from the Department. 36 wireless terminals were issued during 2002, along with laminated point-of-sale signage (“We Accept EBT” or “We Accept EBT, MasterCard, Visa, NYCE” (ATM/debit card) produced by the Farmers Market Federation. The terminals were utilized by the 36 farmers at 20 farmers markets in New York City). As a result, some markets had multiple terminals, others had only 1-2. Farmers with terminals were identifiable by the point-of-sale signs.

Substantial costs were incurred during the pilot project by Tillsmith in providing wireless terminals to participating farmers and in maintaining a field staff in New York City for farmer training, deployment of equipment, and on-site monitoring of operations - including analyzing and resolving technical problems. These costs, as documented by Tillsmith, represented and exceeded the State’s FSMIP grant match requirement. The Department incurred only minor costs in 2000 for meeting expenses & EBT point-of-sale

signage for farmers. Although consumer-awareness posters were produced, it was decided not to conduct a wireless EBT consumer awareness campaign to avoid generating customers until the wireless EBT system was determined to be reliable. The posters, like the point-of-sale signs were therefore posted only at farmers markets with EBT terminals.

Industry-sponsored Pilot Project - Results

The pilot project involved 36 farmers authorized by USDA FNS as vendors in the Food Stamp Program, who marketed through 20 New York City farmers markets during 2000. The Tillsmith K-78 wireless terminals issued to these farmers processed \$1,610.00 in wireless EBT transactions and \$596.00 in credit/debit transactions) made by the farmers during the period September-November, 2000. While these figures were not high, they demonstrated that EBT and credit/debit card sales enhanced farmers' income and provided consumers with access to locally grown fresh produce and other products could be made using a wireless device in an open-air farmers market.

The lightweight Tillsmith K-78 terminals issued to the farmers enabled EBT or credit/debit card transactions to be transmitted/received in an average of 15-20 seconds following a card swipe. Pinpad data entry of type of sale, amount, and PIN (if EBT or debit) required 15-30 seconds, depending on farmer/consumer familiarity. While many such wireless transactions occurred to the satisfaction of farmers and consumers, operational consistency was not attained due to technical problems relating to the complex interworkings of the proprietary EBT software, the wireless data network (including carrier and reception/transmission towers), the land-line telecommunications carriers, and the commercial funds processor, as well as the occurrence of wireless data "dead zones" within some farmers markets. These significant problems -- which resulted in some farmers being unable to process transactions -- frustrated some farmers and prevented wireless EBT and credit/debit card transactions that would have otherwise occurred, but also spurred Tillsmith and the collaborating companies to identify components of the system that needed major improvement.

Results of a survey of 17 farmers conducted in November, 2000 confirmed that while some farmers experienced successful transactions with the wireless terminals both for EBT and credit), other farmers experienced recurrent, aggravating technical problems involving weak wireless signals, frequent system "time-outs", transactions not completing, and insufficient battery life (despite proper charging). However, farmers' understanding of the experimental nature of the project, the extensive degree of on-site support and troubleshooting, by Tillsmith and the Department, corrective efforts taken to replace terminals as needed, and the opportunity for farmer to make constructive suggestions (on person and via the survey), resulted in a consensus of farmer support for continuing the project in 2001 -- if recommended improvements were implemented.

The multiple organizations collaborating on the 2000 pilot project met in New York City in December, 2000 to discuss project results and develop plans for 2001. Based on farmer support for the wireless EBT concept evident in the farmer survey, Tillsmith agreed to make significant improvements to its wireless equipment (EBT software, battery and printer systems) and wireless data network service in order to improve project effectiveness in 2001. On this basis, and because the mostly-unused FSMIP funds were essential to cover leasing costs for upgraded wireless equipment and services, the Department requested and received an extension of the FSMIP Co-operative Agreement through December 31, 2001. Pursuant to this extension, the Department's FSMIP funds line item originally intended for 2000 was retained for use in 2001 to support the project.

2001 Project

In January, 2001, Tillsmith announced it would make technical improvements to its K-78 wireless terminal -- including software, battery and printer components -- based on its own staff's field observations and the comments and suggestions received from participating farmers. The company also announced it would switch the wireless data network used by the terminals from "CDPD" (operated by ATT/Verizon) to "Motient" (Ardis) to enhance signal strength and connectivity, and would also switch to a new bank card processor, Cardservice International (CSI), a California-based subsidiary of First Data Corporation which processes a large volume of Electronic Funds Transfer (EFT) activity (MasterCard, Visa, Amex, ATM/debit, and EBT) throughout the U.S. Because these multiple changes would require time, Tillsmith indicated that the promised upgraded wireless equipment would not be ready for deployment before June, 2001.

Based on the planned improvements, the Farmers Market Federation of New York, with which the Department had contracted to procure wireless EBT equipment, contracted with Tillsmith for 40 K-78 terminals at a lease price of \$850.00 for a six month period commencing June 2001. Additional charges for 2001 to be covered by the Federation using project funds included a one-time set-up charge of \$35.00, a \$12.00 monthly wireless fee; a \$5.00 monthly statement fee; and a \$0.13/EBT transaction fee.

In Spring, 2001, the Department and the Farmers Market Federation organized informational meetings in New York City for FNS-authorized farmers on the 2001 project. Only FNS-authorized farmers from New York State were invited by the Federation to attend these meetings and to apply for one of 40 leased Tillsmith terminals for which funding had been budgeted under the FSMIP grant. At these meetings, conducted by staff of the Department, Tillsmith, and CSI, the upgraded K-78 Tillsmith equipment was demonstrated and Federation and CSI application forms for the new terminals and EBT or EBT+ credit/debit card services were distributed and completed.

Farmers attending the meetings were informed that under the 2001 project they would receive an upgraded K-78 Tillsmith terminal for their use at no cost, and that operating fees and EBT transaction fees charged by CSI to their bank accounts (monthly \$12.00 wireless fee and \$5.00 statement fee, plus \$0.13 per EBT transaction) would be reimbursed by the Federation upon farmers' submission of the monthly statements documenting the reimbursable charges. Reimbursement would be by check. No reimbursement would be made for credit/debit charges (cumulative at \$0.30/transaction + 1.65% of sale amount (credit), or \$15.00 monthly minimum charge, whichever is more).

In June 2001, upgraded K-78 Tillsmith wireless terminals were issued to two FNS authorized farmers at the Union Square and Borough Hall Greenmarkets to test the hardware, software, and network improvements promised by Tillsmith. Although the terminals permitted only credit/debit transactions (due to delays in release of the upgraded EBT software) they exhibited significant improvements in wireless network connectivity, reliability of operation, transaction speed, battery duration, and receipt production, and generated credit/debit sales of \$4,231.54 in June for the two farmers.

Following completion of the upgraded EBT software in August, 2001, and subsequent USDA FNS certification of the new software and system, deployment of the upgraded wireless terminals to applicant farmers began just prior to September, 2001. As a result, higher-speed (<10 second) wireless EBT and credit/debit transactions were made possible on a consistent basis. Deployment of terminals was in progress on Tuesday, September 11, when wireless operations at New York City farmers markets were disrupted as a result of the terrorist attacks on the World Trade Center. Four Lower Manhattan farmers markets where the project was operating, including the Tuesday Greenmarkets at the World Trade Center, Federal Building, and Bowling Green (all operating on September 11), as well as the Tribeca Greenmarket (Saturday) ceased operation due to the attacks.

To productively occupy New York City-based Linkpoint staff pending restoration of wireless services, and in response to strong interest in the project from farmers markets in Rochester undergoing conversion from paper Food Stamps to EBT, the Federation and the Department requested that upgraded Tillsmith terminals awaiting deployment in New York City be tested at the Foodlink Farmers Market in Rochester, N.Y. This test demonstrated the exportability of the project to other areas of the state served by the Motient data network and its stronger wireless connectivity. With the restoration of normal wireless data telecommunications in New York City in October, deployment of upgraded terminals to additional applicant farmers resumed in the city.

By the conclusion of 2001, upgraded K-78 Tillsmith terminals had been issued to 25 farmers participating in farmers markets in New York City -- the majority, however, in October, November, or December. Farmers who completed their produce marketing season by mid-November returned their terminals, with the intention to resume marketing

operations in summer, 2002 if the project was extended. Other farmers who marketed meats, poultry, eggs, cheese, cider, baked goods, storage fruits and vegetables, and horticultural products year-round requested to keep their terminals for use in making EBT and credit/debit card sales during the winter and spring if the project was extended.

Because production and initial delivery of the upgraded wireless EBT terminals was delayed until August, and because 9/11 further delayed deployment, there was insufficient time before December 31, 2001 (the end of the extended FSMIP project period) to provide all applicant farmers with upgraded terminals or to evaluate the terminals' use and effectiveness through transaction data summaries or farmer surveys.

In addition, because the lease term for the wireless terminals was for a six-month marketing season, beginning at the time of deployment, it extended well into 2002 for most of the terminals deployed in 2001. To permit the terminals to be used and evaluated over the full duration of the lease, and to ensure that available FSMIP funds could be used to procure the planned number of upgraded terminals, the Department requested and received a second extension of the project until December 31, 2002.

Due to the abbreviated length of the 2001 season, farmer participation and other project data for 2001 is combined with the data for 2002 (see attachment).

2002 Project

In early 2002, TillsmithSystems was purchased by Linkpoint International, a subsidiary of Cardservice International and First Data Corporation. Linkpoint announced that it would replace the K-78 terminals with newer model Linkpoint 9100 terminals containing technical enhancements including software improvements to enhance battery performance, simpler data entry menus, a more powerful battery, and a faster speed (4X) thermal printer with expanded paper width and capacity.

As in 2000-2001, any New York State farmer marketing at any NYC farmers market who was authorized by USDA as a vendor in the Food Stamp Program was eligible to participate, regardless of whether they participated at farmers markets only in low-income neighborhoods, at markets only in "upscale/downtown" areas (such as Greenmarkets at Union Square, lower Manhattan, or Downtown Brooklyn), or at markets in both types of areas. As a result, the project included farmers markets with potentially large numbers of EBT participants, markets with large numbers of shoppers with credit/debit cards (but relatively few EBT participants), and markets with a combination of both.

To facilitate the deployment of Linkpoint 9100 terminals to previously participating farmers, as well as enrollment and training of new participants, two meetings were conducted by the Department, Linkpoint, and CSI staff in Middletown, N.Y. and New

York City in March, 2002. Farmers who applied to participate following the meetings submitted paperwork and received their terminals and training later at the markets.

A total of 40 Linkpoint 9100 terminals were issued to 40 New York State farmers participating in 35 New York City farmers markets during 2002, along with new “We Gladly Accept” P.O.S. signage for EBT or EBT, Visa, MasterCard, and NYCE (ATM/debit card). The project operated from January to December. While some farmers participated for the entire year, others participated only for the months when their products were in season or following delivery of their terminal. Because the terminals were portable, the farmers could use them at any of the markets they attended in the city.

Participating farmers generally opted for “EBT-only” terminals or “EBT plus credit/debit” terminals as a function of the consumer profile of the markets they attended, as well as the types of products they sold. Farmers choosing “EBT-only” terminals (35%) did so (1) because they primarily sold at markets in low-income areas where they did not expect significant credit/debit card use and/or (2) because they did not expect significant credit/debit sales for their products (typically fruits & vegetables) at their higher income markets. Farmers choosing “EBT plus credit/debit” (65%) did so because:

(1) they sold at one or more markets in “upscale” or higher income locations where they hoped to initiate or expand EBT sales regardless of previous significant history of Food Stamp redemption and (2) they hoped to generate credit/debit card sales to shoppers carrying credit and debit cards in the higher income area markets they attended.

While some of the farmers who opted for EBT+ credit/debit sold only fresh produce and herbs, some sold higher-value food products (e.g. meat, dairy products, eggs, baked goods), and others sold a combination of produce or other foods and high-value non-food products, such as plants and flowers, that were eligible for sale with credit/debit cards but not with EBT. While none of these farmers could be certain of what types of items, if any, would generate credit/debit sales, they reasoned that such sales would be most likely with higher value items for which consumers carried insufficient cash to purchase, or in larger total sales for which the convenience to “buy on credit” would be greatest.

Although it was expected that the Linkpoint 9100 would perform successfully, it was decided that the 2002 project would continue to focus on the demonstration of the wireless systems efficiency, convenience, and reliability. As a result, no citywide consumer awareness campaign was developed to promote use of EBT at the markets, as this would have necessitated a high confidence level that terminals at participating markets would all be in use and functioning effectively for the duration of the campaign.

The intentional decision not to publicize the project meant that only EBT participants noticing the P.O.S. signs would be aware that they could make EBT transactions at the markets. This in turn meant that the EBT volume would depend on the number of EBT

shoppers currently shopping at farmers markets, the visibility of the signs, EBT customer preference for using EBT over other forms of payment (e.g. cash or WIC/Senior Farmers Market Nutrition Program checks where a consumer was enrolled in both programs), the level of farmer effort in encouraging EBT use, and the functionality of the terminals.

If -- as a result of any or all of the above factors -- the initial restoration of EBT at the markets did not immediately generate significant EBT sales to farmers, it was decided that the project would still serve an important purpose by providing an opportunity to demonstrate the technical viability of wireless EBT. Significantly increasing wireless EBT sales by emphasizing the advantages of shopping at farmers market (quality, freshness and reasonable price) to former Food Stamp customers and new EBT customers could be a next step once the system's functionality was demonstrated.

Because a much larger number of credit/debit card users than EBT card users already were shopping (with cash) at farmers markets in "upscale" farmers markets in and middle/upper income "downtown" commercial areas like Union Square and Borough Hall (Brooklyn), significantly higher use of the wireless terminals for credit/debit than for EBT was expected as an outcome of the project in the absence of an EBT consumer awareness campaign.

At the conclusion of the project, the Farmers Market Federation reimbursed participating farmers for the monthly wireless charges, statement fees, and EBT transaction fees debited from their individual bank accounts by CSI during the period 2001-2002. These reimbursements were calculated from CSI monthly statements for each farmer. A total of \$2,302.10 in EBT-related charges was reimbursed.

At the conclusion of the year, Linkpoint donated the 40 Linkpoint 9100 wireless terminals leased for the project to the Department of Agriculture and Markets, as their value had significantly depreciated during the course of the lease due to their regular use. The terminals continue to be used in the New York City portion of the current FNS-funded Farmers Market Wireless EBT Project, permitting the farmers who participated in the AMS funded project to continue to make EBT only or EBT + credit/debit transactions without the need for additional expenditures.

2001-2002 Project Results

The 2001-2002 project involved 40 New York State farmers authorized by USDA FNS as retail vendors in the Food Stamp Program who sold fresh fruits, vegetables, and other products directly to consumers at 35 farmers markets in New York City. The farmers used 40 Linkpoint 9100 wireless card payment terminals leased by the Farmers Market Federation to make sales at the markets.

The 40 farmers collectively processed \$65,909.91 in wireless EBT and credit/debit

transactions during the period June 2001 to December 2002 using the Linkpoint 9100 terminals. The attached spreadsheet lists the participating farmers, the types of products they marketed, the demographic characteristics of the markets they attended, the type of wireless card service they chose to utilize (EBT only or EBT + credit/debit), whether they made EBT and/or credit/debit transactions, and the typical and maximum size of these transactions, based on the farmer survey (see below). For confidentiality purposes, total sales figures for individual farmers are not listed in the report. Of the 40 participating farmers, 25 made EBT or credit sales. The remaining 15 farmers did not make any sales.

Available Card Service International reports do not permit a breakdown of sales between EBT and credit/debit, but it is estimated from the market locations and the types of products sold that credit/debit sales exceeded EBT sales by a factor of 15:1. Some of the farmers with the largest total sales operated exclusively at the city's largest farmers market, the Union Square Greenmarket, located in a high-traffic "downtown" commercial area and patronized by large numbers of middle-upper income shoppers. While Union Square farmers reported that they made EBT sales, the majority of their customers are not low-income. Also, significant use of the terminals at Union Square was associated with sales of plants, flowers, & Christmas trees, which are not eligible for purchase with EBT.

EBT sales activity and analysis

While the project's EBT volume is estimated as relatively low, it nonetheless demonstrated that EBT sales can be made using a hand-held wireless device an open-air farmers market in the same manner and speed as in a conventional food store. These sales enhanced farmers' income and provided Food Stamp/EBT consumers with access to locally grown fresh produce and other products at farmers markets, and could not have taken place without the wireless terminals. Because the Linkpoint 9100 wireless terminals generally functioned effectively (see results of farmer survey below), the low proportion of EBT sales to credit/debit sales can attributed to three factors:

(1) The decision not to mount a large-scale consumer awareness/nutrition education campaign directed to EBT participants that would have promoted EBT purchase of fresh produce and other products at all markets where the terminals were operating. This decision -- required by the need to assure system reliability -- made it impossible to inform Food Stamp customers who no longer shopped at the markets in low-income areas following the conversion of the Food Stamp Program to debit cards, or to attract new EBT customers to such markets and to markets in downtown commercial centers or other accessible locations which had minimal or no Food Stamp activity in the past. The EBT sales that did occur in the markets were made only to EBT participants who were already shopping in the markets with cash (or WIC/Senior FMNP checks - see below), who saw "We Gladly Accept EBT" P.O.S. signage, or who knew by word-of-mouth.

(2) The widespread availability of Farmers Market Nutrition Program (FMNP) checks to low-income WIC and Senior nutrition program participants, who used them to shop for fresh fruits and vegetables at the same markets at which the wireless EBT project was operating. While WIC staff estimates that over 50% of WIC FMNP participants also receive Food Stamp/EBT benefits, and it is possible that some of these WIC/EBT users noticed the point-of-sale “We Gladly Accept EBT” signs at the markets, it is likely that these WIC EBT consumers preferred to use their WIC FMNP checks (as supplemental income) to shop for fresh fruits and vegetables rather than spend a portion of their limited Food Stamp/EBT benefit for the same items. This is suggested indirectly by the fact that farmers with EBT terminals in these markets did experience EBT sales for a variety of non-produce food items for which FMNP checks could not be accepted.

(3) Consumer demand and small purchases at high-volume, low-income markets. The typically high-volume cash and FMNP check activity at farmers markets in low income areas of New York City participating in the project results in waiting lines of FMNP and cash customers on market day (typically one day per week). This high pressure situation, resulting in part from the success of another federal food assistance program (FMNP), necessitates that farmers’ sales staff make rapid sales to waiting customers, tends to deter the use of wireless EBT by farmers. Compared to a typical cash/coupon transaction time of only 5-10 seconds, wireless EBT requires a card swipe and data/PIN entry (15 seconds) and an electronic transmission (10-20 seconds - length varies with location and conditions). (If the terminal is not “on” an additional 15 seconds are needed.) The time is the same regardless of the value of the sale (small or large). Typical sales per farmer at low-income farmers markets are relatively small, as customers shop at multiple stands for different items (average “typical” EBT sale was \$6.00 - see survey results). In high volume New York City farmers markets, it is more appealing for a farmer to make a fast sale to the next cash/coupon customer than to spend 30-45 seconds earning \$6.00 via an EBT transaction. For EBT consumers, while the time required for a wireless EBT transaction at a farmers market is now not much more than for a wired EBT sale at a grocery store (assuming the terminal is turned “on”), the fast-paced nature of high-volume New York City farmers markets appears to encourage the use of cash for small purchases at each farmers’ stand rather than a single purchase at a “check-out”.

As a result of these factors, only 25 of the 40 participating farmers made EBT sales under the project based on the farmer survey (see spreadsheet). Farmers with no EBT sales either (1) sold only fresh produce in farmers markets in downtown business districts or in higher income residential areas where EBT customers were relatively few, or (2) sold produce in high-volume markets in low-income areas with large numbers of FMNP customers who primarily used their checks in making purchases. Several of the farmers who made no EBT sales had problems with wireless data interference at their markets (“dead zones”), or other terminal technical problems that they chose to leave unresolved due to the high volume of cash and FMNP check sales.

Credit/debit sales activity and analysis

Based on the farmer survey (see below), the proportion of wireless credit/debit sales was very high compared with EBT. This was evidently due to (1) the large number of credit/debit card customers shopping in markets in downtown commercial centers and higher income area locations, (2) the ability to purchase both food and non-food items (such as plants and flowers) with credit/debit cards (as compared to the restriction on EBT to food products), and (3) the appeal of making purchases (large or small) at the farmers market with credit/debit rather than -- owing to insufficient cash on hand, the convenience of using a credit or debit card, and/or a preference for "buying on credit". It is probable that the availability of credit/debit resulted in significant sales of farm products that would not have otherwise occurred with cash - especially "impulse sales" of larger-ticket items for which the customer was not able to purchase with cash.

Farmers who did substantial sales in credit/debit were generally producers of high-value food or other farm products including meat, dairy products, eggs, baked goods, plants, flowers, and Christmas trees. For farmers with continuous product availability, credit/debit sales were consistent over the duration of the project. For farmers whose products had strong seasonal peaks of availability (e.g. Spring plants and Christmas trees), their credit/debit sales spiked substantially during these periods.

Farmers who made no credit/debit sales included those who sold only at markets in low-income areas and those whose product line was limited to fruits and vegetables. Several farmers who made no credit/debit sales had problems with wireless interference at their markets, or other terminal technical problems that they chose to leave unresolved.

Farmer Survey - Evaluation of sales and wireless terminal performance

In November, 2002, a project evaluation survey was mailed to the 40 farmers participating in the 2002 project requesting information about EBT and credit/debit sales characteristics, as well as the operation of the Linkpoint terminal and its various components and related services (see survey form attached). Of the 40 surveys mailed, 27 surveys were received (67.5%). The survey findings are reported below by question:

Did you use the terminal to make EBT or credit/debit sales?

Yes: 24 No: 3 (Gorzynski Farm, Paffenroth Farm, Tello Farm - see comments)

Was your terminal set up for EBT or EBT+ credit/debit?

EBT only: 5 EBT + credit/debit: 22

Did you make EBT sales with the terminal?

Yes: 18 No: 9

If yes, how many EBT sales did you make per day?

Typical day: 0-1, 1, 1, 1, 1-2, 1-2, 2, 2, 3, 3, 3, 4, see sheet

Average of typical days: 1.83

Highest day: 1, 1, 2, 3, 3, 3, 5, 5, 6, 8, 10

Average of highest days: 4.27

What was the value of the typical EBT sale?

Responses: \$1-3, \$2, \$2, \$3, \$4, \$5-6, \$6, \$8, \$8, \$8, \$9, \$6-\$10, \$8-\$10, \$10

Average of typical sales: \$6.03

What was the value of the maximum EBT sale?

Responses: \$5, \$8, \$8, \$10, \$10, \$13, \$15, \$16, \$20, \$20, \$25, \$25, \$29, \$36, \$40

Average of maximum sales: \$18.66

What products were sold to EBT customers (with typical and maximum sales):

Fruit and vegetable producers: (typical sales \$2, \$2, \$3, \$4, \$6, \$8, \$6-\$10, \$8-\$10, \$10; maximum sales \$5, \$13, \$20, \$20, \$25, \$25, \$36)

Meat-only producer (typical sale \$9; maximum sale \$16)

Baked goods-only producers (typical sales \$1-3, \$10; maximum sales \$10-15, \$29)

Bread, cheese, yogurt, and meat producer (typical sale \$8; maximum sale \$40)

What was the response of EBT customers to using the terminal?

“Thrilled to have the ability to use their cards” (Added Value); “Great!” (Alex Tomato Farm); “Happy!” (Elk Trails Farm); “Grateful!” (Glebocki Farm); “Liked it a lot” (see sheet) (Horn of Plenty/Meredith’s); “Thankful and understanding while we work out technical problems” (Hawthorne Valley Farm); “OK” (Jenkins-Leukin Orchards); “OK” (Migliorelli Farm); “Favorable” (Morgiewicz Farms); “Pleasant” (Orchards of Concklin); “People like it” (S & SO Farm) “Very good” (Trinity Farm); “OK” (Troncillito Farms); “Customers are pleased to be able to use their EBT card” (Wilklow Orchards) “Positive response” (Windfall Farm); “Customers are happy” Windy Maple Farms)

Did EBT sales increase over time?

Yes: 6 No: 11 No answer: 10

If EBT sales were fewer than expected what do you think was the reason?:

“Limited public knowledge about its availability/lateness of the season” (Added Value Farm); “Most customers not informed about availability” (Alex Tomato Farm); “Had signs up but no requests for use” (Do-Re-Mi Farms); “My products are mostly upscale and may not fit the needs of many EBT users” (Fantastic Gardens); “Few people knew about the terminals despite signs being posted” (Froehlich Farms); “Our customers don’t seem to be ready for it - they need to be informed about EBT at the markets (Jenkins-Luekin

Orchards); “No requests for use - public not aware - most of my customers are not EBT participants” (Gorzynski Farm); Customer not used to terminal - didn’t use like Food Stamps were used” (Horn of Plenty/Meredith’s); “Did not have the terminal until late in season” (Morgiewicz Produce); “Consumer awareness currently low” (Red Jacket Orchards); “EBT customers are currently rare at farmers markets [and] may think the markets are expensive. Also had terminal function problems” (Rexcroft Farms); “Terminal did not always function” (S & S.O. Farms); “No requests ” (Tello Farm); “Customers not aware” (Troncillito Farm); “Terminal functioned intermittently (Windfall Farm); “Not many requests for EBT at market” (Windy Maples Farm)

Did you use the terminal to make credit/debit sales?

Yes: 15 No: 7 (Total with credit/debit: 22)

If yes, how many credit/debit sales did you make per day?

Typical day: 0-1, 0-1, 0-1, 0-1, 1, 2-3, 3, 5, 5, 6, 9, 10, 20

Average of typical days: 4.8

Highest Day: 1, 1, 1, 2, 6, 8, 10, 12-14, 15, 18, 20, 30

Average of highest days: 10.4

What was the value of the typical credit/debit sale?

Responses:

\$4, \$4, \$5-\$10, \$10, \$10-\$15, \$12, \$15, \$15-\$20, \$15-\$20, \$25, \$25, \$30, \$35, \$40, \$40

Average of typical sales: \$19.66

What was the value of the maximum credit/debit sale?

Responses: \$4, \$4, \$10, \$12, \$15, \$18, \$50, \$72, \$80, \$90, \$100, \$105, \$150, \$150, \$200

Average of maximum sales: \$70.66

What types of products did you sell to credit/debit customers? (typical & maximum sales)

Fruit and vegetable producers (typical sales \$5-\$10, \$10-15, \$12; maximum \$18, \$30)

Meat-only producer (typical sale \$26; maximum sale \$105)

Cheese, bread, yogurt, and meat producer (typical sale \$25; maximum sale \$100)

Baked goods/fruit producer (typical sale \$15; maximum sale \$80)

Ornamental/greenhouse producer (typical sale \$40; maximum sale \$200)

Christmas tree producer (typical sale \$40; maximum sale \$150)

What was the response of credit/debit customers to using the terminal?

“Surprised it was available” (Added Value Farm); “People were impressed by wireless connection and speed of transaction (Alex Tomato Farm); “Happy” (Elk Trails Farm); “Joyful” (Fantastic Gardens); “Surprised we had the ability” (Hawthorne Valley Farm); “Thankful” (Hodgson Farm); “Liked it a lot” (Horn of Plenty/Meredith’s; “Pleasant - delighted” (Orchards of Concklin); “Positive response” (Windfall Farms); “Unbelievable response”! (Windy Maples Farm)

Did credit/debit sales increase over time?

Yes: 7 No: 15 (22 of 27 survey respondents had EBT+credit/debit)

If credit/debit sales were fewer than expected what do you think was the reason?

“Credit/debit was not used as our customer base is largely low income (WIC participants and Seniors (Added Value Farm); “People did not know they could charge” (Hodgson Farms); “Found it too difficult to use the terminal due to fast pace of market” (Paffenroth Farm); “Customers need to be more informed - sales not big enough for consumer to use the card” (Renewal Farm); “Performance not fast, consistent, reliable - does not generate enough sales” (Rexcroft Farm)

How would you rate the overall functionality of the Linkpoint terminal?

Excellent: 7 Good (few problems): 10 Other: 6 (various problems)

How would you rate the “user-friendliness” of the terminal?

Easy to use: 21 Difficult to use: 3 Other: 3

How would you rate the terminal’s wireless signal strength?

Consistently strong: 5 Mostly strong: 12 Inconsistent: 6

How would you characterize the terminal’s typical transaction time following data entry?

Less than 10 seconds: 5 10-20 seconds: 15 No answer: 7

How would you rate the terminal battery’s power/longevity after pre-market charging?

Holds sufficient charge for full day’s use: 12

Does not hold sufficient charge for full day’s use: 6 No answer: 9

If it held insufficient charge, were to able to charge the terminal at the market? Yes: 4

How would you rate the reliability of the terminal’s printer?

Excellent: 10 Good: 9 No answer: 7

Did you display “We Gladly Accept” signage? Yes: 25 No: 2

How consistently? All the time: 17 Some of the time: 6 Rarely or never: 2

What type of signage? Small laminated signs only: 8 large poster: 10

Both small laminated signs and large poster: 6 Own signage: 1 NA 2

Did you inform customers by other means? Yes (“verbally”): 9 No or no answer: 18

Was the wireless terminal training and the printed instructional materials adequate?

Yes: 22 No: 2 No answer: 3

Did you request technical assistance via the CSI help desk hotline?

Yes: 11 No: 12 No answer: 4

For what reasons? “Closing the day’s batch” (Alex Tomato Farm); “Battery problem” and “interrupted signal” (Fantastic Gardens); “To send batch via landline mode (very helpful staff (Hawthorne Valley Farm); “Transaction interruption” (Hodgson Farm); “Terminal not functioning” (Orchards of Concklin) (Rexcroft); “Reception problem” (Windfall Farms); “To OK charging battery via dashboard” (Windy Maple Farm) “Didn’t send batch from previous day” (Horn of Plenty/Meredith’s)

Summary comments/suggestions

“We love and appreciate participating in the project and expect it to expand exponentially in the coming year. Inform offices where people receive benefits and send letters to EBT recipients (Added Value Farm); “Let people know about this new EBT service at the farmer market - once they know about it they will use it. Produce larger signage, use radio, and newspapers. (Alex Tomato Farm); “Expand the project to help all farmers survive. Frees up [consumers’] cash for use at [other] farmers’ stands who do not have the terminals” (Fantastic Gardens); “Offer master promotional flyer to farmers for duplication” (Jenkins Luekin Orchards); “More promotion needed” (Orchards of Concklin); “Consumer education currently low - expand it.” (Red Jacket Orchards); “We are very satisfied with project. Thank you for your support. (Windy Maples Farm.); “Difficult to fit into market - cannot be used fast enough for customers’ satisfaction Troncillito Farm);”Performance not fast, consistent, reliable. Does not generate enough sales (Rexcroft Farm); “Customers need to be more informed - sales not big enough for consumer to use the card” (Renewal Farm); “Transaction times were never an issue (Alex Tomato Farm); “Transaction times could always be better” (Orchards of Concklin) “It will take time for customers to adjust to this kind of payment” (Horn of Plenty)/

Do you see potential for more EBT and credit/debit sales?

Yes: 16 Maybe: 2 No: 4 No answer: 5

Do you wish to continue using your terminal in 2003?

Yes : 25 No: 2

Conclusions

Linkpoint Wireless Terminal Performance

The significant sales volume that occurred through the project demonstrated that the Linkpoint 9100 wireless terminal performs effectively in making EBT and credit/debit transactions at open-air farmers markets in areas where wireless data service is available. For most of the farmers who made EBT and credit/debit sales, terminal performance was consistent and reliable, and the few problems that occurred required only a minor “fix”, such as a new battery that was easily resolved by Linkpoint.

Some farmers, however, did experience problems with their Linkpoint terminals. In six cases the problems were due to “wireless interference” at certain locations at the farmers markets that blocked consistent communication with the nearest wireless data tower. Two of these interference problems were resolved. In several other cases, the nature of the problem was unclear, and probably involved terminals deployed in 2001 or early 2002 that were not fully upgraded “production models” containing the latest software.

EBT Sales Potential

The project demonstrated that EBT sales will not automatically occur simply because EBT service has been made possible with wireless terminals. While EBT sales volume during the project was relatively low compared to credit/debit, a significant number of participating farmers expressed the opinion that wireless EBT at farmers markets has potential for growth if it is properly promoted (various suggestions were offered - see survey results). By contrast, farmers at high-volume farmers markets in low-income areas indicated that EBT has little potential for use in their fast-paced, small-sales operations until it is made even faster (and more efficient) than at present. However, as wireless technology evolves, it is likely that processing speeds will increase, just as they have for land-line terminals and food stores. When this occurs, farmers at even high-volume markets may be able to manage high-volume EBT activity by dedicating trained staff to EBT and having access to more than the one wireless terminal. Other markets in New York City and elsewhere, where sales are not extremely fast-paced, can benefit from wireless EBT terminals now to enhance sales to farmers and provide Food Stamp/EBT participants with improved access to high quality, farm-fresh food. In such locations, increased EBT sales will be a function of the extent of consumer outreach and education.

Because the Linkpoint terminal was demonstrated to be reliable, and will likely continue to be improved as new technology is developed, future farmers market wireless EBT projects should incorporate a well-planned consumer education campaign to publicize awareness of the project in order to realize the volume of EBT sales that can be generated at farmers markets in low income areas, especially at markets where Food Stamp use was substantial prior to the conversion to EBT.

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Credit/Debit Sales Potential

The project demonstrated that there is a significant immediate potential to be realized by farmers from the use of Linkpoint wireless terminals to make credit/debit card sales for high-value farm products such as meat, dairy products, baked goods, plants, flowers, and

Christmas trees at open-air farmers markets. Farmers selling such products at farmers markets serving large numbers of credit/debit card customers can expect to realize additional sales to those who lack sufficient cash for a purchase, or who purchase more because of the convenience of charging the sale or making the purchase without cash. Such additional sales involve payment of typical card fees (MasterCard, Visa, Amex, ATM/debit) such as those charged to farmers for credit/debit services during the project, but their cost in fees is far exceeded by the income generated from the additional sales.

Farmers who do not participate as USDA FNS authorized vendors in the Food Stamp Program, and who would therefore not qualify for a state-issued wireless EBT terminal under a wireless EBT project, are now able to purchase a credit/debit-only Linkpoint wireless terminal that, depending on their product line and farmers market locations, could repay their investment quickly. Such terminals could also be used productively at other marketing locations with wireless data access, such as roadside farm markets, pick-your-own farms, or urban/rural delivery routes lacking the capacity for wired operation.